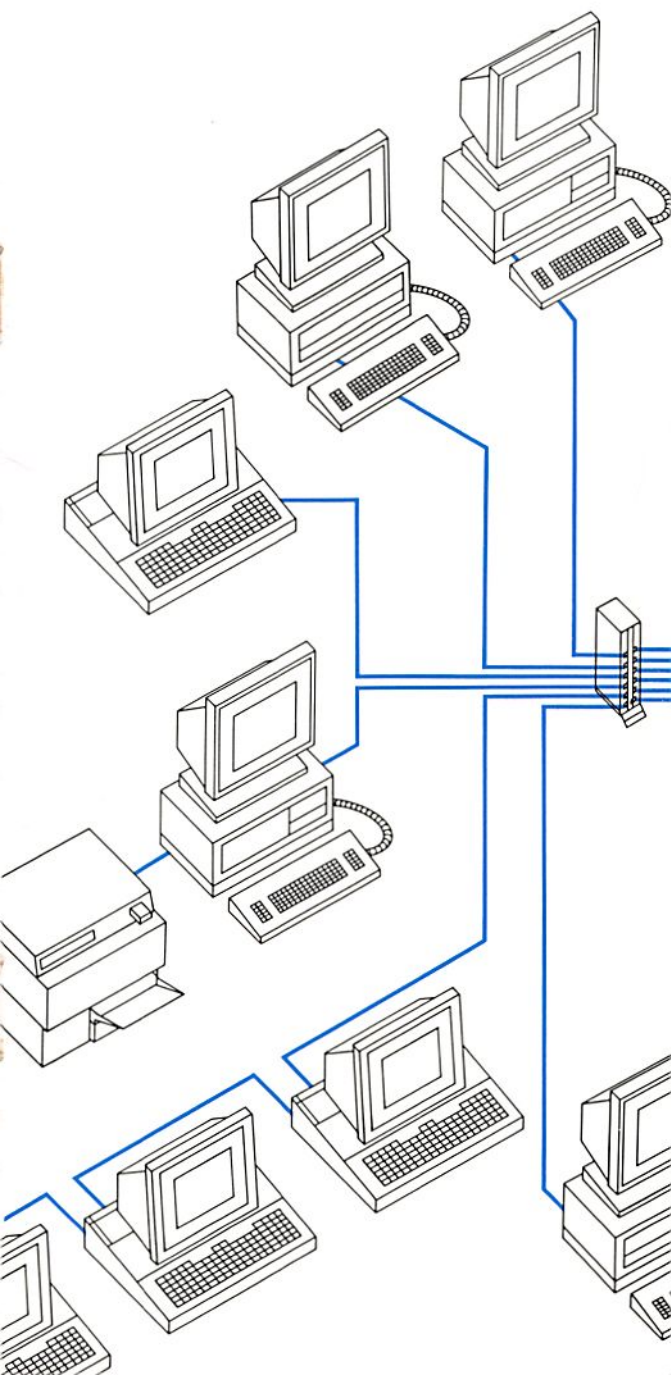![AT&T logo]

AT&T STARLAN
NETWORK
Reference Card

AT&T STARLAN NETWORK

The AT&T STARLAN NETWORK is a low-cost local area network designed to interconnect intelligent workstations. It offers many attractive features, making it a superior networking solution for PC-to-PC connectivity.

The AT&T STARLAN NETWORK is the IEEE 802.3 draft standard for 1 Mbps CSMA/CD networks over unshielded twisted-pair wiring.

STARLAN NETWORK is appropriate both as a standalone product for small offices and departmental workteams, and, in conjunction with ISN, represents a total data networking solution for medium and large companies.

Network Characteristics At a Glance

Data Rate:	1 Mbps
Access Method:	CSMA/CD
Modulation Type:	Baseband
Media:	2 pair, unshielded twisted-pair wiring (24 gauge), with 8-pin connectors
Standards:	IEEE 802.3 draft standard
Devices Supported:	AT&T PC 6300
	AT&T PC 6300 PLUS
	IBM® PC™, PC XT™, PC AT™, and compatibles (running PC-DOS™ 3.1 or later release)
	AT&T UNIX™ PC (Models 7300 and 3B1)
	AT&T 3B2 (Models 300, 310, and 400)

AT&T STARLAN NETWORK
Configurations

The STARLAN NETWORK supports a range of modular configurations which can be mixed and matched to meet a variety of needs. A network can support up to 1210 physical connections, and up to 100 active sessions depending on applications.

Configurations	Specifications
Daisy Chain	Connects up to 10 devices via modular cord Max. distance limit: 400 cable ft. between end stations
Star Configurations	Requires NEU to make connections
Room Star	Connects workstations in a single room without sharing phone wiring Up to 11 legs per NEU
Extended Star	Up to 11 legs per NEU Up to 10 (daisy-chained) stations per leg Max. of 110 connections per NEU (11 legs, 10 stations per leg) Up to 800 cable ft. to far station; distance to far station dependent on number of devices per leg and number of NEUs (see table)
Two-Tier Star	Master NEU can support up to 11 co-located NEUs Max. of 1210 connections per network (11 NEUs, 110 stations per NEU)
Closet Star	Connections via building wiring NEU installs in telephone wiring closet and connects to cross-connect block Single-line *analog* phone plugs into NAU; station connects to wall jack. Separate jacks for digital, hybrid, and multi-line phones If legs are daisy-chained, only station nearest the wall jack can support a phone. Use separate jacks for others

Distance Considerations

Stations Daisy Chained to a Single NEU IN Jack	Single NEU Config. (ft.)	Multiple NEU Config. (ft.)
1	800	800
2	800	800
3	800	800
4	800	800
5	800	725
6	725	625
7	625	550
8	550	450
9	450	400
10	400	400

AT&T STARLAN NETWORK
Services

Service	MS-DOS to MS-DOS	UNIX to UNIX	MS-DOS to UNIX
File Sharing	x	x*	x
Print Sharing	x	x	x
Electronic Mail	Optional	x	x
File Transfer		x	
Remote Program Execution		x	x**

*With future enhancements of **UNIX**.
**Not supported at time of initial availability.

AT&T STARLAN NETWORK
Features

Relationship	DOS to DOS Client/Server	UNIX to UNIX Peer-to-Peer
File Server		
Record Locking	x	x*
File Locking	x	x*
Security	x	x
Print Spooling		
Queue Inquiry	x	x
Prioritize/Reorder	x	x**
Delete from Queue	x	x**
Banner Heading Page	x	x
Multiple Copies	x	x
Hold/Defer/Release	x	x**
Electronic Mail		
Multiple Address Levels	x	x
Broadcast/Group Address	x	x
Append, Cut and Paste	x	x
Auto Reply/Forward	x	x
Registered Mail	x	x
Communication		
File Transfer	—	x
Terminal Emulation	Optional	x
SNA™ Gateway	—	x
Security		
Login	x	x
Password Security		
File Server/Directories	x	x*
Print Server	x	x*
MS-DOS Mail	x	
Encrypted Mail	x	
Remote Program Execution		x

*With future enhancements of **UNIX**.
**Local capability.

MS-DOS Server Guidelines

File Sharing
AT&T PC 6300   4-8 Clients

AT&T PC 6300
PLUS   6-12 Clients

Printer Sharing
Typical load   10 workstations per server, but limited by speed of printer

Printers Supported
AT&T 473 dot matrix printer

AT&T 455 letter quality

HP™ LaserJet

Other popular printers

Tape Backup
Mountain Combo 6300 Tape Backup Unit

UNIX Host Guidelines

Login Applications:
UNIX PC hosts can run applications for other workstations on the network, in addition to an application for the local user.

Model 7300   Up to 3 terminal workstations

Model 3B1   Up to 5 terminal workstations

Printers Supported
AT&T 470 dot matrix printer

AT&T 455 letter quality

HP LaserJet

Other popular printers

Tape Backup
AT&T **UNIX** PC Tape Backup Unit

AT&T STARLAN NETWORK
Workstation Requirements
(Phase I)

Device	Memory/ (Disk Req.)	Hardware/Software Required
AT&T PC 6300		
Workstation	256 KB (384 KB*)/ (None Req.)	MS-DOS 3.1 or later release AT&T PC 6300 Network Program AT&T PC 6300 NAU
Server	512 KB/ (10 MB)	
Concurrent Server	640 KB/ (10 MB)	
AT&T PC 6300 PLUS		
Workstation	512 KB/ (None Req.)	MS-DOS 3.1 or later release AT&T PC 6300 Network Program AT&T PC 6300 NAU
Server	512 KB/ (20 MB)	
Concurrent Server	640 KB/ (20 MB)	
AT&T UNIX PC Models 7300 and 3B1	1MB/ (20 MB)	AT&T **UNIX** PC System Software Version 3.0 AT&T **UNIX** PC Network Program AT&T **UNIX** PC NAU

*For AT&T PC 6300 Network Program with menus.

Note: If the AT&T STARLAN NETWORK is installed on an IBM PC, PC XT, or PC AT, use PC-DOS 3.1 or later release.

AT&T STARLAN NETWORK Components

AT&T STARLAN NETWORK Access Units (NAUs): Printed circuit cards that fit into expansion slots on PCs and processors. One NAU is required for each networked device. Current versions of NAUs are:

- AT&T PC 6300 NAU: Can also be used on the AT&T PC 6300 PLUS; the IBM PC, PC XT, PC AT; and compatibles

- AT&T **UNIX** PC NAU: For Models 7300 and 3B1

- AT&T 3B2 NAU: For Models 300, 310, and 400

AT&T Network Extension Unit (NEU): A hub for expanding the network beyond a Daisy Chain. Primary component for Star configurations (see Network Configurations).

AT&T RS232C Network Interface Unit (NIU): Provides 2 EIA ports for directly connecting asynchronous devices.

Modular Cords: Simple, unshielded twisted-pair wiring (24 gauge) and plug-in connectors.

AT&T STARLAN NETWORK Software: The following programs are available on floppy disks:

- AT&T PC 6300 Network Program

- AT&T **UNIX** PC Network Program

- AT&T 3B2 Network Program

- AT&T **UNIX** PC DOS Server Program*

- AT&T 3B2 DOS Server Program*

Associated Components
AT&T STARLAN Interface Modules (SLIMs): Current versions of SLIMs are:

- SLIM-B: Bridges multiple STARLAN NETWORKs.

- SLIM-C: Provides STARLAN NETWORK users connectivity to AT&T Information Systems Network (ISN) resources, including hosts.

*Enables these devices to act as servers to DOS machines.

AT&T's Total Networking Solution

The AT&T STARLAN NETWORK is part of AT&T's three-tier approach to providing customers with a *total* networking solution:

- **The AT&T Premises Distribution System (PDS)**—a building cabling scheme for consistent, low-cost physical distribution.

- **The AT&T Information Systems Network (ISN)**—a backbone network optimized for high-speed host-to-host and terminal-to-host traffic.

- **The AT&T STARLAN NETWORK**—supporting PC-to-PC networking needs.

STARLAN NETWORK users can access ISN devices and corporate data bases on ISN-connected mainframe computers via the AT&T STARLAN NETWORK Interface Module C (SLIM-C). Multiple STARLAN NETWORKS can be linked on ISN via the SLIM-B.

The STARLAN NETWORK is compatible with AT&T's Information Systems Architecture. This assures customers of compatibility with AT&T's voice and data product line.

Key Selling Points

Inexpensive Twisted-Pair Wiring:
Simple installation and reduced cabling cost—via modular cords and building telephone wiring.

Low Startup Costs: AT&T's Daisy Chain is a low-cost solution for linking small groups (2 to 10 workstations)—without using central hardware.

Flexibility for Growth: Flexible, modular configurations enable the network to grow—up to 100 active users and up to 1210 connected workstations—without requiring expensive hardware and software changeouts.

Supports Both MS™-DOS Based and UNIX System Based Workstations:
Now, customers have the flexibility to select the workstations most suited to their needs—and still be assured of connectivity.

A Range of Servers: Customers can use their existing hard disk PCs as file and printer servers for MS-DOS based workstations, or use multi-tasking **UNIX** System devices (AT&T **UNIX** PC or 3B2) as servers for DOS workstations.

Concurrent Servers: Eliminate the need to purchase a dedicated server for small networks—since a PC can concurrently function as both a server and a workstation.

Runs Off-the-Shelf Software:
Conformance to standards (e.g., MS-DOS 3.1, NETBIOS, Microsoft™ Networks core protocols) assures customers that the most popular network-compatible software packages will run on the AT&T STARLAN NETWORK. Most applications written to the NETBIOS interface of the IBM PC Network (and IBM's Token Ring Network) are compatible with the AT&T STARLAN NETWORK.

AT&T Reliability and Service Support:
Provides a high level of nationwide services, including installation, maintenance, and support.

Low-Cost RS232C Interface: Provides a low-cost option for connecting asynchronous devices to the network.

Easy End-User Interface: Easy-to-use networking, even for first-time users via simple menus (with windowing capabilities) and context-sensitive help.

Configurations:	Daisy Chain
	Stars: Room Star, Extended Star, Two-Tier Star, and Closet Star
Servers:	AT&T PC 6300 Hard Disk and compatibles
	AT&T PC 6300 PLUS
	AT&T **UNIX** PC (Models 7300 and 3B1)
	AT&T 3B2 (Models 300, 310, and 400)

Qualifying a Prospect

Target Market: The STARLAN NETWORK is optimized for 2 to 50 users per network (supporting up to 100 active users*) in small, medium, and large organizations. Especially appropriate are those workteams that run horizontal applications.

A customer with 2 + PCs in a given workteam, department, etc. that answers "yes" to one or more of the following questions is a prospective PC network customer:

- Do PC users frequently need to share files?
- Are you considering upgrading some or all of these PCs to a hard disk?
- Do PC users work on the same spreadsheets, reports, or documents?
- Do you need to standardize master documents, financial models, etc.?
- Do you have laser printers or other high-speed printers that you would like to share?
- Are you considering acquiring dedicated printers for each PC for greater convenience?
- Do you want to reduce expenditures on multiple copies of popular PC application software?
- Have you considered taking advantage of electronic mail?

*Depending on applications.

AT&T Service Support

A full complement of service and support options are available, including:

Installation. Installed by the customer or by trained AT&T Systems Technicians.

Wiring installation options:

- AT&T installation via PDS:
  - Flat rate price list
  - Time-and-materials basis
  - AT&T Premises Service Consultant (PSC) quote
- Customer installable using standard standalone PDS components. *Note:* PDS components can be ordered by PECs through DOSS—by contacting an AT&T-IS representative.

Warranty. Hardware and software products carry a 90-day warranty from date of purchase.

Hotline Support. Provided during warranty period at no additional charge. Thereafter, available through maintenance options.

Maintenance.

- *During warranty period:* Standard maintenance provided at no additional cost; consists of Hotline-supported remote maintenance for software, and mail-in exchange for defective product.

- *Post-warranty period:* AT&T offers a range of maintenance options, including:

  Hardware

  - Business Day Service (contracted)
  - Around-the-Clock Service (contracted)
  - Dedicated Service (contracted)
  - Mail-In Exchange (contracted)
  - Per Occurrence (non-contracted)
  - Mail-In Exchange (non-contracted)

  Software

  - Remote Only Service (contracted)
  - Business Day Service (contracted)
  - Around-the-Clock Service (contracted)
  - Telephone Hotline Assistance (non-contracted)

Price Element Codes

PE Code   Description

AT&T STARLAN NETWORK Access Unit
2614-100   AT&T PC 6300 NAU Package
2614-200   AT&T UNIX PC NAU Package

AT&T Network Extension Unit
2610-001   NEU Package

Software Packages
1020-S01   AT&T PC 6300 Network Program
1030-S01   AT&T UNIX PC Network Program

Modular Cords
For an AT&T PC 6300 or a compatible computer equipped with an AT&T Communications Manager card, use the short modular cord (listed below) to connect the card to the NAU.

For an AT&T UNIX PC Model 7300 or Model 3B1, use the short modular cord (listed below) to connect a LINE jack to the NAU.

PE Code   Description
2725-40b   D4BU: 2 ft.

Select among the following modular cords to connect workstations in a Daisy Chain or directly to a hub:

Cord Length (ft.)	DW8A-DE Standard Modular Cord* PE Code	DP8B-DE Plenum Modular Cord** PE Code
10	2725-29K	2725-32K
25	2725-29S	2725-32S
50	2725-29V	2725-32V
75	2725-29Y	2725-32Y
100	2725-29Z	2725-32Z
150	2725-30X	2725-33X
200	2725-34X	2725-34X

*4-pair, 24-gauge PVC satin silver double-ended modular cord.
**4-pair, 24-gauge plenum satin silver double-ended modular cord.

Note: See the Marketing Guide for PE Codes for adapters, connecting blocks, four-pair station cable rolls, other cords, etc.